

We claim:

1. A fuel cell apparatus comprising a fuel cell (1), a pressurized fuel tank (2) for supplying fuel at a supply pressure and a pressure-reducing unit for reducing said supply pressure to an operating pressure of the fuel cell, wherein said pressure-reducing unit comprises a cooling apparatus for cooling at least one cooling element.
2. The fuel cell apparatus as defined in claim 1, wherein said at least one cooling element comprises a heat exchanger.
3. The fuel cell apparatus as defined in claim 1, wherein said cooling apparatus comprises at least two heat exchangers (5, WT1, WT3).
4. The fuel cell apparatus as defined in claim 1, wherein said at least one cooling element comprises a condenser (5) for condensation of an operating medium.
5. The fuel cell apparatus as defined in claim 1, wherein said at least one cooling element (5) comprises an air conditioning apparatus for air conditioning a space.

6. The fuel cell apparatus as defined in claim 1, further comprising cooling means (8) for cooling and wherein said cooling means (8) at least comprises said cooling apparatus.

7. The fuel cell apparatus as defined in claim 1, wherein at least one heat exchanger is arranged on said fuel cell (1).

8. The fuel cell apparatus as defined in claim 1, wherein said pressure-reducing unit comprises a throttle valve (4).

9. The fuel cell apparatus as defined in claim 1, wherein said pressure-reducing unit comprises a machine for producing mechanical energy from a fluid flow.

10. The fuel cell apparatus as defined in claim 1, further comprising a separate heat exchanger (WT2) for heating said fuel for the fuel cell (1).

11. The fuel cell apparatus as defined in claim 1, wherein said separate heat exchanger (WT2) comprises means for using dissipated heat from said fuel cell (1).

12. The fuel cell apparatus as defined in claim 1, further comprising at least one internal combustion engine.

13. An energy generating apparatus for generating electrical and/or heat energy, said energy generating apparatus comprising a fuel cell (1), a pressurized fuel tank (2) for supplying fuel at a supply pressure and a pressure-reducing unit for reducing said supply pressure to an operating pressure, wherein said pressure-reducing unit comprises a cooling apparatus for cooling at least one cooling element.

14. The energy generating apparatus as defined in claim 13, wherein said at least one cooling element comprises a heat exchanger.

15. The energy generating apparatus as defined in claim 13, wherein said cooling apparatus comprises at least two heat exchangers (5, WT1, WT3).

16. The energy generating apparatus as defined in claim 13, wherein said at least one cooling element comprises a condenser (5) for condensation of an operating medium.

17. The energy generating apparatus as defined in claim 13, wherein said at least one cooling element (5) comprises an air conditioning apparatus for air conditioning a space.

18. The energy generating apparatus as defined in claim 13, further comprising cooling means (8) for cooling and wherein said cooling means (8) at least comprises said cooling apparatus.

19. The energy generating apparatus as defined in claim 13, wherein at least one heat exchanger is arranged on said fuel cell (1).

20. The energy generating apparatus as defined in claim 13, wherein said pressure-reducing unit comprises a throttle valve (4).

21. A motor vehicle comprising a fuel cell apparatus, said fuel cell apparatus comprising a fuel cell (1), a pressurized fuel tank (2) for supplying fuel at a supply pressure and a pressure-reducing unit for reducing said supply pressure to an operating pressure, wherein said pressure-reducing unit comprises a cooling apparatus for cooling at least one cooling element.

22. The motor vehicle as defined in claim 21, further comprising an internal combustion engine.

23. The motor vehicle as defined in claim 21, wherein said at least one cooling element comprises a heat exchanger.

24. The motor vehicle as defined in claim 21, wherein said cooling apparatus comprises at least two heat exchangers (5, WT1, WT3).

25. The motor vehicle as defined in claim 24, wherein said at least one cooling element comprises a condenser (5) for condensation of an operating medium.

26. The motor vehicle as defined in claim 24, wherein said at least one cooling element (5) comprises an air conditioning apparatus for air conditioning a space.

27. The motor vehicle as defined in claim 24, further comprising cooling means (8) for cooling and wherein said cooling means (8) at least comprises said cooling apparatus.

28. The motor vehicle as defined in claim 24, wherein at least one heat exchanger is arranged on said fuel cell (1).

29. The motor vehicle as defined in claim 24, wherein said pressure-reducing unit comprises a throttle valve (4).